

What is claimed is:

1. A method for fabricating a ferroelectric memory device, comprising the steps of:

5 a1) forming a lower electrode on a predetermined surface of a semiconductor substrate;

 b1) forming a metal oxide layer over a surface of the lower electrode and a surface of the semiconductor substrate;

10 c1) forming an inter layer dielectric film over the metal oxide layer;

 d1) performing a blanket etching for the inter layer dielectric film and the metal oxide layer in order to expose an upper surface of the lower electrode; and

15 e1) forming an opening which has a predetermined depth, wherein the opening is obtained by removing only the metal oxide layer between the inter layer dielectric film and the lower electrode through a selective etching process.

20 2. The method as recited in claim 1, wherein the metal oxide layer is formed by using one of an Al_2O_3 layer, an TiO_2 layer, a TaO_2 layer, a ZrO_2 layer, and a HfO_2 layer.

25 3. The method as recited in claim 1, wherein a thickness of the metal oxide layer ranges from about 1 Å to about 500 Å.

4. The method as recited in claim 1, wherein a wet etching is carried out by using a selective etching process.

5. The method as recited in claim 4, wherein the wet selective etching process is carried out by using an etching solution containing at least one selected from a group of sulfuric acid, nitric acid and phosphoric acid.

6. The method as recited in claim 5, wherein a concentration of the etching solution for the wet selective etching process ranges from about 0 % to about 50 %.

7. The method as recited in claim 4, wherein the wet etching process is carried out by using an etching solution containing a ammonia (NH_4OH) liquid or a hydrogen peroxide (H_2O_2) liquid.

8. The method as recited in claim 7, wherein a concentration of the etching solution containing the ammonia (NH_4OH) liquid or hydrogen peroxide (H_2O_2) liquid ranges from about 0 % to about 50 %.

9. The method as recited in claim 9, comprising the steps of:

a2) forming a ferroelectric layer over the lower electrode and inter layer dielectric film; and

b2) forming an upper electrode over the ferroelectric

layer formed on the lower electrode.

10. The method as recited in claim 1, wherein the lower electrode is constituted sequentially with an
5 platinum (Pt) layer, an iridium oxide (IrOx) layer and an iridium (Ir) layer.

11. The method as recited in claim 10, wherein the ferroelectric layer is constituted with one of materials of
10 (Bi, La)₄Ti₃O₁₂ (BLT), SrBi₂Ta₂O₉ (SBT), SrBi₂(Ta_{1-x}, Nb_x)₂O₉ (SBTN), and (Pb, Zr)TiO₃ (PZT).